

I CLAIM

1. A filter comprising a housing having an inlet port and an outlet port such that a plurality of passages are disposed within the housing in an S-flow pattern, the plurality of passages fluid
5 flow connecting the inlet port with the outlet port and such that each of the plurality of passages is bounded on at least one side by a membrane filter.

2. The filter as in claim 1 further comprising at least one flange disposed within the plurality of passages for creating
10 turbulence within a fluid flowing within the plurality of passages.

3. The filter as in claim 2 wherein the at least one flange is disposed between a connection point between a respective two of the plurality of passages.

4. The filter as in claim 1 wherein each membrane filter is a generally flat sheet member held within a frame.

5. The filter as in claim 4 wherein each frame is secured within a first guide attached to a first end of the housing and within a second guide attached to a second end of the housing.

6. The filter as in claim 1 further comprising a plurality of permeate ports, each attached to a respective one of the membrane filters and each terminating outside of the housing.

7. A filter comprising:

a housing having a first end and a second end;

a first end cap having an inlet port attached to the first end of the housing;

a second end cap having an outlet port attached to the second end of the housing; and

5 a plurality of membrane filters disposed within the housing in generally parallel fashion such that the membrane filters create a plurality of passages that are disposed within the housing in an S-flow pattern, the plurality of passages fluid flow connecting the inlet port with the outlet port.

10 8. The filter as in claim 7 further comprising at least one flange disposed within the plurality of passages for creating turbulence within a fluid flowing within the plurality of passages.

9. The filter as in claim 8 wherein the at least one flange is
15 disposed between a connection point between a respective two of the plurality of passages.

10. The filter as in claim 7 wherein each membrane filter is a generally flat sheet member held within a frame.

11. The filter as in claim 10 wherein each frame is secured
20 within a first guide attached to a first end cap and within a second guide attached to the second end cap.

12. The filter as in claim 7 further comprising a plurality of permeate ports, each attached to a respective one of the membrane filters and each passing through the second end cap.

25 13. A method for filtering a fluid comprising the steps of:

providing a tank for holding the fluid;

providing a heating system for heating the fluid held within the tank;

providing a filtering system for filtering the fluid;

5 pumping the fluid through the filtering system such that the filtered fluid is pumped back to the tank and a permeate is removed from the fluid is removed from the filtering system.

14. The method as in claim 13 wherein the filtering system comprises:

10 a housing having a first end and a second end;

a first end cap having an inlet port attached to the first end of the housing;

a second end cap having an outlet port attached to the second end of the housing; and

15 a plurality of membrane filters disposed within the housing in generally parallel fashion such that the membrane filters create a plurality of passages are disposed within the housing in an S-flow pattern, the plurality of passages fluid flow connecting the inlet port with the outlet port.

20 15. The method as in claim 14 wherein at least one flange is disposed within the plurality of passages for creating turbulence within a fluid flowing within the plurality of passages.

16. The method as in claim 15 wherein the at least one flange is disposed between a connection point between a respective two of
25 the plurality of passages.

17. The method as in claim 14 wherein each membrane filter is a generally flat sheet member held within a frame.

18. The method as in claim 17 wherein each frame is secured within a first guide attached to the first end cap and within a
5 second guide attached to the second end cap.

19. The method as in claim 14 wherein the permeate is removed by providing a plurality of permeate ports, each attached to a respective one of the membrane filters and each passing through the second end cap and pumping the permeate through the permeate
10 ports.

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